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unsuccessful and the weak. The critical examination which is making of the principles of socialism reenforces from the side of economic science the ethical recoil toward juster views of the relations of individual and social duty. There is room, however, for further progress in this direction. If responsibility in the last analysis is personal, it is also true that the society on which the moral action terminates is made up of individual units, among whom the agent himself is one, with personal rights and duties to himself as well as obligations to regard the claims and needs of fellow men. Nay, further, it is but half a paradox to say that all duty, including our duty to others, is in one essential aspect duty toward ourselves. For each man owes right conduct to himself. It is part of his moral manhood, an element in his own self-respect, to observe ethical rules, including such as primarily benefit his brethren or the community of which he and they are fellow members. In a sense, therefore, moral obligation is always obligation to one's self.

The practical consequences of this principle also are evident. Added to the implications of the earlier conclusion, they forbid the sinking of the individual in the mass. Ethics is a matter of individual responsibility; it is also a matter of personal self-respect. Obligation may be shared, but it can not be alienated. The service of others includes an element of duty to self. The spread of such principles would not diminish the benefits which have sprung from the social view of morality, although it would tend to correct the balance of ethical theory. Their acceptance, on the other hand, would elevate and fortify the ethical practise of our time.

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DISCUSSION

PRAGMATISM VERSUS SCIENCE

ACCORDING to Professor James, science has 'broken down,' and to this pragmatism, or humanism, 'owes its being.' Whatever this penetrating philosopher believes deserves public consideration. Nevertheless, science embodies the beliefs of the greatest number of conservative and weighty thinkers in present civilization. It is well, then, to review both sides of the case before accepting the new gospel.

The 'two states of mind' (Professor James's phrase) originate, largely, in different assumptions regarding 'the world of physics.'

Every informed man to-day distinguishes between his vision or perception of another man, and the other man himself. From this percept he infers the other man's mind. This sort of inferring is widely called paralleling. Both pragmatism and science parallel 'the line of evolution,' as we commonly say, down approximately to protoplasm. They similarly infer human minds, monkey minds, infusoria minds, etc.

At protoplasm pragmatists hesitate. And further down the line they do not carry out this paralleling. For perceptions of tables and of granite they do not make similar inferences. Instead, they identify such objective percepts as the ultimate objects themselves. For pragmatists the physical world is the sum of such percepts.

For pragmatists, therefore, 'that table' and 'percept of that table' have one meaning. Likewise, 'the physical world' and 'our percepts of the physical world' have identical meaning. This, although 'Professor James' and 'percept of Professor James' have very different meanings.

Also, and consequently, there is a fundamental looseness in every pragmatist's meaning of 'a thing.' In Professor James's famous explanation of 'how two minds can know one thing,'[1] he calls two percepts, in the two minds, one and the same thing, though he admits that the two percepts are much unlike. Thus he calls 'one' what are as much two as the minds are two. Likewise, regarding all other 'things,' pragmatists call 'one thing' what, to science, are innumerable different percepts, in innumerable separate minds. To science this seems as grave a source of error as would be that of calling and treating all the stars of the firmament as 'one star.' How this looseness contributes to the belief that science has broken down should be kept in eye.

In any case, since for pragmatists 'the physical world' is merely the sum of human percepts and concepts of it, since for them no other things and firmament exist, therefore it is easy to see how they derive, from this 'human' physical world, their belief that the 'dogmas' of science concerning it are mere 'human inventions.' And from this to the belief that these 'dogmas' are subservient to one's esthetic and religious ideals, and are to be accepted, rejected or modified accordingly, is an inevitable step for certain temperaments. In passing, we note that both pragmatism and Christian Science alike originate with Berkeley, both hold his notion of the physical world, both measure 'truth' similarly, and both are similar 'states of mind.'

In strong contrast with all this, science infers something, similarly, for all our objective percepts and concepts. It does not identify our physical percepts with their objects, does not intend the same meaning by 'tables,' 'things' and 'physical world' as it does by 'perceptions of' them. It consistently makes as sharp distinction between these meanings as between 'Professor James' and 'perception of Professor James.' Also, it does not loosely confound 'one and the same thing' with innumerable unlike perceptions in innumerable separate minds. It is not surprising that such vastly different assumptions, meanings and uses of words as these, respectively, of pragmatism and of science, weave to very different 'states of mind.'

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[1] 'How Two Minds Can Know One Thing,' this JOURNAL, Vol. II., p. 176.

There are scientists who are pragmatists. But officially and in accord with the inmost beliefs of by far the greatest number of its leaders and followers, science rejects the Berkeleian notion. Professor James tacitly admits this when he says 'science' has broken down. Nevertheless, science does not reject this notion naïvely. Scientists are as wise of Berkeley, of Kant, of the nature of our percepts and of all the latest psychology as are perceptualists. But they see alternative conclusions to those of pragmatism.

If the above sort of mental parallelism be carried out for all 'objects' or for 'the entire content of space,' and if the plain man's world be preserved as well, this gives us two physical worlds, one mental, the other spatial: twin worlds, parallel throughout, whole for whole, and detail for detail. These furnish us with double objects of knowledge, universally. Therefore 'Occam's razor' bids us reject one of these worlds as superfluous and improbable. And since it seems best to decide that the universe (of which our own minds indubitably are parts) is of one general sort throughout, therefore it seems best to decide the above choice in favor of a physical world in some way mental. Yet this need not leave us pragmatism.

To conceive a non-spatial world to take the place of the spatial one which science still officially but tentatively presumes, is admittedly difficult. Pragmatists, with all other perceptualists or followers of Berkeley, declare the feat impossible. Hence their refusal to carry parallelism further down than protoplasm, and their identification of the world of physics with the sum of our body percepts. Nevertheless, a large school of modern opinion holds that there are ways in which the difficulty may be overcome.

Formerly the physical world was conceived to be comprized of innumerable 'material attributes,' each and all of which were incompatible with mind. Also the human mind was conceived to comprize numerous faculties and features equally incompatible with matter. Under these conditions the difficulty of identifying mind with matter did seem insurmountable. But of late both physics and psychology have done vastly much to simplify the problem.

Physics, according to many of its greatest authorities, has simplified itself by reducing its physical world to one homogeneous, universal fluid; or, to state the case more exactly, by bringing all the concepts with which physics has heretofore busied itself under one general concept of an universal, mutable space. Therefore, in so far as physics is concerned, 'the difficulty' is now reduced to conceiving a mental universe which this concept of 'one mutable space' may perfectly symbolize.

Meanwhile psychology has equally simplified its conception of mind. Two of its leading schools, those of Professor James and of Professor Wundt, have reduced all minds to content processes, to content of one general sort, like our colors, smells, tastes and other sensory elements. They conceive all such content to be 'continuously transformative': for examples, that a color utterly transforms into and becomes, perhaps, a taste or a sound; that a vision or perception turns, perhaps, into a concept or idea, this into a train of reasoning, this into a succession of percepts, concepts, ideas, judgments, beliefs, emotions and so on, throughout life.

According to this conception, all mental processes whatsoever reduce to such content transformations. Every individual mind is such a continuous content process, from its birth forward. Only its present transforming state exists at any given time. All past states cease to exist, absolutely. The universe comprizes innumerable such minds, of innumerable grades. All alike begin with some simplest possible condition of mere mental content, and all alike grow or develop, throughout their transformative stages, in accord with the same general laws of mental genesis. But some grow more and higher than others. Hence the 'line of mental evolution' comprizes, first, the simplest possible minds, then all the rising grades, such as infusoria minds, lobster minds, monkey minds, human minds, and we know not what other minds of still higher attainments.

There are still schools of philosophy which do not accept this simplified version of the mind and of the universe. But confining our present discussion to those hypotheses, open to science, which are most in accord with those of Professor James, it is now to be observed that the difficulty of conceiving a physical world which our all-embracing concept of space may symbolize, resolves, according to the above version, into that of conceiving what 'the mutable space' of present physics may mean or signify in terms of this continually transforming mental content distributed in these innumerable minds of various grades.

The key to this is found, by some, in presentative genesis. 'Presentative form' is a phrase denoting the make-up of any present state of mind. Of these forms there are three main types: fused, numerical and spatial. Fused forms show no parts, either numerical or spatial; smells are of this type. Numerical forms show parts, but no spatial arrangement; sound harmonies example this type.

Spatial forms show both numerical parts and spatial arrangement; our sight and touch presentations are of this sort.

In Kant's day these 'categories' of form were attributed to separate 'faculties.' To-day it is demonstrable that they are different stages of presentative development, which shade each into the next higher, under one and the same law of genesis. All alike derive from respective degrees of serial stimulation of our nerve ends; or, more exactly, from the order of activity of our brain cells, to which such stimulation leads. This may be stated in terms of Professor James's 'pure experiences' instead of either 'stimulation' or 'brain cells,' yet its significance remains unchanged.

Smell nerves, in the nose, are always stimulated *en masse;* smells are always fused. Taste stimulations are mostly 'massive'; tastes are mostly fused. Touch stimulations, on the roving tongue, are in fine series; from the tip of the tongue we get our finest tactual space presentations. The touch nerves of the skin afford lineal stimulation in every direction; their results are spatial. The heat and the cold nerves of the skin, though they have the same arrangement as the touch nerves, are affected by temperature changes *en masse;* their sensations are fused. The nerves of sound, in the ear, are hit sometimes together, but far more often serially; we hear some harmonies, but sounds are never spatially arranged. Muscle, visceral and pain nerves for the most part are stimulated *en masse;* for the most part their sensations are fused. The nerves of the eye are stimulated in finer bundles than anywhere else, and in every direction; our visions are most clearly spatial. Finally, the same nerves that ordinarily give us 'a straight line' may be educated to give us a triangle or some other figure.

Throughout all our senses, then, our presentative forms follow one general law of continuous development or genesis. There is no law of psychology, or of physics, more demonstrable; there is none more important. The significance of this law, for our main theme, is momentous in more ways than one, and may prove decisive.

According to modern genetic psychology, and especially that of Professor James, the mind is an indivisible whole or solidarity. So also is its genesis; from birth, it develops as a whole. Always it knows as a whole. Therefore, in view both of the mind's action and its genesis, its 'spatial faculty,' if we roughly so call its power of knowing by means of our space presentations, must be indivisible from its knowing power as a whole, must be 'warp and woof' with it at all times. From birth they grow up together and inseparably. Our above law of genesis explains the fact, and makes the deduction imperative. In Kant's day of separate faculties it was easy to reject that of space, and to trust only certain supposed higher faculties.

But to-day this is absurd. To suspect one faculty is to suspect all; they are indivisibly one. For example, if we reject the spatial testimony of our senses, we must not only reject their numerical testimony as well, but also the power of the mind to know numerically at all. All alike are the indivisible product of one and the same historic genesis, and the spatial testimony is the higher and the inclusive product.

But in face of all this we find Professor James, with other perceptualists and pragmatists, accepting the testimony of our spatial percepts and concepts for inferring minds 'all the way down to protoplasm,' yet rejecting such testimony 'below protoplasm,' and for inferring a physical world in some way mental, apart from *all* our percepts and concepts alike. In view of Professor James's own psychology, therefore, his method of inference seems in the highest possible degree inconsistent and suspicious. In view of his psychology, the Berkeleian inference is now, unmistakably, an anachronism. For it one must divide the indivisible knowing power of the whole mind, so much insisted on by Professor James for all else, and must accept only so much of it as suits one's 'state of mind.' Possibly here is another clue to the pragmatic belief that science 'has broken down.'

Our genetic law yields revelations regarding the physical world of still greater moment. In any mind, every line (such as we see, or feel by touch) presents spatially the non-spatial elements or 'pure experiences' from which it has genesis by reason of their forerunning serial order of occurrence, 'activity' or 'stimulation.' The line not only represents these non-spatial elements, but also their genetic or habitual order of activity. The reversible, or, as we commonly say, the fixed, order of the line from end to end reveals a correspondingly fixed or habitual order of activity in the elements of universal mental content so presented; those from which they have genesis by our law. Through the line we *know* these elements and their 'fixed order.'

But all our spatial presentations or experiences are made up of such lines. Through such presentations we similarly know all their corresponding regions of cosmic origin and their order of activity. Moreover, all psychologists now agree that these spatial presentations develop into our spatial percepts of objects and of things; these, in turn, into our corresponding concepts of things and of space; these, into our final concept of one universal space and of its contents. Therefore by tracing back this genesis (from concepts to percepts, from percepts to presentations, from presentations to their component lines, and from each spatial line to the non-spatial mental elements from which they derive) our genetic law enables us to determine the ultimate universe for which science and philosophy have been so long in search, enables us to determine the mental universe which all our percepts and concepts 'know,' and enables us to do this satisfyingly at once of the precision demanded by science and of the empiricism insisted upon by Professor James and all pragmatists.

This gives a possible alternative to the 'human world of physics' assumed by pragmatists, gives a universe of mental content whose 'continual transformations' constitute a non-spatial 'world order' which satisfies every demand at once of physics and of psychology. In this fixed world order each transformative part has a 'functional place' corresponding to the 'spatial place' which symbolizes it in our percepts, concepts and every-day mental life. Each mental part transforms accordingly as every other mental part transforms, throughout the universe, transforms according to the law of gravity and all the other laws of physics and of the psychophysics of modern psychology. In short, all these laws apply to this mental universe precisely as they aforetime were conceived to apply to the material universe.

Just as in ordinary physics certain fundamental laws apply to all matter, and other special laws apply only to certain kinds of matter, so, under this new conception, do all laws still called physical apply to and describe the transformations that occur in mental content without regard to the individual minds that contain it; while other special laws, those of individual psychology, govern and describe the transformation processes in particular minds.

According to this alternative it is conceived that the universe, in so far as our knowledge of it extends, began with one primitive, homogeneous mind; and that the genesis of separate individual minds and of rising grades of minds, such as 'evolution' calls for, transpired, and still transpires, by one and the same system of upward-trending laws.

At first sight this seems to necessitate the 'cracking in pieces' and 'gluing together' of mental content, which Professor James vehemently declares is 'inconceivable' in view of the indivisibility of 'a mind.' But even he conceives that mental content 'comes into' and 'goes from' every mind. And though we conceive this 'coming and going' to be from nowhere and into absolute nothingness, as he apparently does, still it is open to us to conceive that it is reciprocal: that when any content 'goes from' any mind, in Professor James's own way, a precisely similar content 'comes into' some other mind, also in his own way, and all without 'cracking' or 'gluing.' How often does philosophy hang on mere metaphor!

This removal of Professor James's fundamental objection, it would seem, leaves him no reasonable excuse for persisting in his Berkeleian hypothesis and rejecting the above alternative. The latter starts from his own psychological premises, and never transcends them. It avoids the no longer excusable inconsistencies of 'stopping at protoplasm' and of calling innumerable percepts one and the same thing. It conforms to the unity of the mind's knowing power and to the unity of its genesis. It preserves the indispensable significance of 'space' and of 'place.' It preserves to physics its cosmic validity, to science and to philosophy a uniform language, and to all language its essential meanings. It unites physics and psychology, science and philosophy, experience and religion, all on one workable ground. All of which things pragmatism hopelessly upsets. Above all, it promises a united advance of unprecedented moment to mankind.

Science has not committed itself to this particular alternative. It does hold fast till some equivalent of it 'proves out.'

Before comparing the larger promises of science and of pragmatism, we may examine their contrasting methods and their definitions of truth.

Pragmatism declares itself to be a method of discovering truth in consequences. The meaning of any concept 'lies in its consequences.' "The truth of any statement *consists* in the consequences, and particularly in their being good consequences." Truth is 'highest satisfaction,' 'highest belief.'

The method of science already includes taking account of all possible differences and consequences. It also includes search for and interpretation of present data. Pragmatists can differ from this only by abandoning these latter and confining themselves to speculation as to the future alone. It seems incredible that they should consciously intend this, however unmistakably their writings declare it and their philosophy bears evidence of its having been done.

We now reach the most famous feature of pragmatism, its definition of truth. "At each and every concrete moment," according to Professor James's official formula, "truth for each man is what that man 'troweth' with the maximum of satisfaction to himself."

To all mankind, heretofore, truth has meant 'conformity to fact.' Facts may conform in two main ways. Barometers conform when they themselves are alike. Things that are thus alike have been called 'truthful copies.' Barometers are not thus copies of the weather, yet they conform to the weather in their reactions. Such reactions have been called 'truthful reactions.' The gist of pragmatism, in so far as its definitions of truth and of knowledge are concerned, lies in its exaltation of reaction, and its disparagement of copying even to the extent of denying it wholly where, heretofore, it has been deemed indispensable both to truth and to knowledge. This is exampled in the following quotation from Professor James: "Let the reader suppose himself to constitute for a time all the reality there is in the universe, and then to receive the announcement that another being is to be created who shall know him truly. How will he represent the knowing in advance? What will he hope it to be? I doubt extremely whether it could ever occur to him to fancy it as a mere copying. Of what use to him would an imperfect second edition of himself in the newcomer's interior be? It would seem pure waste of a propitious opportunity. The demand would more probably be for something absolutely new. The reader would conceive the knowing humanistically, 'the newcomer,' he would say, 'must *take account of my presence by reacting on it in such a way that good would accrue to us both.* If copying be requisite to that end, let there be copying; otherwise not.' The essence in any case would not be the copying, but the enrichment of the previous world."

On its face, this reminds one of the casuistry by which the hands of the clock exalted themselves above the pendulum and the weights. If the reader would fancy anything of the kind,he himself will judge. In any case, the fact is indubitable that both reaction and resemblance, or 'copying,' are equally indispensable to all truth and knowledge of the ordinary sort. According to Professor James's explanation of 'how two minds can know one thing,' this knowing is constituted wholly by the appearing, in the two minds, of two *like* perceptual processes at appropriate times. Without likeness or 'copying,' therefore, no two minds could ever 'know one thing,' even according to Professor James's own account of the matter. And this is but saying that no mind could ever know what any other mind, being, or thing-in-itself might be like, could ever know it in the ordinary sense of knowing, *no matter how he reacted to it.*

Most criticisms of pragmatism have been directed against its denial of 'copying' as involved in its definitions of truth and of knowledge. In the heat of discussion it has been overlooked that these definitions are quite as irreconcilable with their pretended exaltation of 'reaction,' as with the indispensableness of 'copying.' If Professor James reacted to any given sort of divine direction, now with 'satisfaction' and as often with 'dissatisfaction,' plainly there would be in this as little 'conformity of reaction' as 'truthful copying.' Moreover, in order to defend the belief that divine satisfaction is a reaction to divine direction, it is not necessary to violate all established definitions of truth. Also, it is not necessary to 'break down' all language in order to prove that all science has 'broken down,' in case it has done so. Suppose a man does react to a pouring rain, with the belief that he is walking in sunshine, and with 'the maximum of satisfaction to himself at that concrete moment,' as an insane man well might: hardly will Professor James call this concrete instance of trowing 'a true trowing.' Just why, therefore, his abstract definition of truth is so much more attractive to the 'pragmatic state of mind' than the innumerable concrete instances that obviously contradict it, can only be accounted for by the 'state of mind' itself. We can only infer that Professor James contends for his definition of truth, as he does in his 'Varieties of Religious Experience,' for all conditions of 'trance,' be they alcoholic, epileptic or 'religious'; that its authority is likely to be conceded only by those who have experienced the 'trance.'

No man who follows out the dictates of modern psychology to consistent inference of a physical world which satisfies all our percepts and concepts, will fall into the belief that 'ether is a noun for the verb to vibrate,' that the laws of physics are 'mere human inventions' and that science has 'broken down.' The man who from carelessness, or academic habit, starts from the Berkeleian anachronism and inconsistently conforms his inferences to it, is already far on the road to that belief. Yet back of both starting-points, temperament is apt to be a deciding factor in the making as well of a pragmatist as of a scientist. Education and circumstance may counteract it; they also may confirm it.

The respective temperaments of pragmatism and of science may very significantly be called the impatient and the patient.

To the impatient man the betterment of mankind by the toilsome researches of science, is too remote. To him the regeneration of human souls by a better system of education and by a better system of social and industrial economy, is too slow a method. He must have immediate evangelism. To him the conception that the value of life is in the living, is repulsive. That the joys of heaven are to be found in the direction traversed, he resents. He demands immediate translation. He frames his philosophy and his religion accordingly.

Nevertheless, the 'patient' interpretation of life, of science and of heaven has 'broken down' only for the impatient.

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REVIEWS AND ABSTRACTS OF LITERATURE

La misura in psicologia sperimentale. ANTONIO ALIOTTA. Firenze: Galetti & Cocci. 1905. Pp. 253.

This treatment of measurement in psychology is a work of criticism, and very acute criticism, written, however, by one who does not follow